Beltsville Area
Notes
From the Director

Agricultural Research Service | United States Department of Agriculture | Beltsville, Maryland

175 | January 1988

NOTES ABOUT OUR SCIENTISTS

Dickinson Named CEO of National Dairy Herd Improvement Association

Dr. Frank N. Dickinson, who has served as Research Leader of the Animal Improvement Programs Laboratory for the past 15 years, will take his new post on March 1, 1988. Dickinson has worked closely with the National Dairy Herd Improvement Program for more than 20 years. The most popular output of the Laboratory has been the semiannual USDA/DHIA Sire Summaries. This effort involves analysis of data from more than 4 million dairy cows in about 60,000 herds throughout the United States. It has resulted in raising the average milk production per cow by more than one thousand per decade.

Draper and Scott Receive ASHS Outstanding Fruit

The Fruit Breeding Work Group of the American Society for Horticultural Science presented the award to Drs. Arlen Draper and D. Scott (retired) of the Cultivar Award Fruit Laboratory. This newly established award, given for the first time, recognizes Draper's contribution to, and role in, the development of the strawberry cultivar, 'Earliglow.' A significant aspect of this award is that all existing fruit cultivars were eligible for recognition as a most significant improvement in variety development. Clearly, the selection of this cultivar and the recognition of Draper and Scott to receive this first award, is testimony to the significant impact this cultivar has had since its first release.

Borkovec Awarded Medal of Outstanding Achievement in International Plant Protection

At the 11th International Congress of Plant Protection in Manila, Philippines, October 5-9, 1987, the Philippines Secretary of Agriculture, Carlos Dominguez, presented the award to Dr. Alexej B. Borkovec. Borkovec has made many contributions in pesticide chemistry and in insect biochemistry and physiology. Borkovec has been the cooperating scientist on numerous PL-480 projects, and he has trained many scientists from third world countries.

Finney, Johnson, Marrow, Hall, Hackett, Fleming, and Bartholow Receive EEO Awards

The following awards were made at the Federal Women's-Hispanic Employment Recognition Program on Tuesday, September 15, 1987: Special Recognition: Dr. Essex Finney, Jr., previous BA Associate Director, for outstanding support to the BA-EEO program; Ms. Margaret Johnson, EEO Manager, for personal commitment to the BA Federal Women's Program; Mr. George Marrow, Pesticide Degradation Laboratory, for exceptional performance as EEO counselor. Supervisor/Manager Award: Mr. Franklin R. Hall, Division of Operations, nominated by coworkers for fair/equal decisions; Dr. Kevin J. Hackett, Insect Pathology Laboratory, for sensitivity to personal development. Impact Award: Mr. Alton Fleming, Plant Stress Laboratory, for promoting the goals and objectives of the EEO program within ARS. Mrs. Janet Bartholow, Fruit Laboratory, was named BA Clerical Employee of the Year.

Award-Winning Holly Developed by Dudley, Eisenbeiss and Egolf

Drs. T. Dudley, N. G. Eisenbeiss, and Donald Egolf are proud to have the holly named 'Sparkleberry,' that they developed, selected to receive the first Pennsylvania Horticultural Society Styer Award of Garden Merit in 1988. The full list of award winners are Ilex x 'Sparkleberry,' Hedera helix 'Buttercup,' Itea virginica 'Henry's Garnet,' Magnolia x 'Elizabeth,' Prunus 'Okame,' and Zelkova serrata 'Green Vase.' The award winners will be announced in the January/February 1988 edition of Green Scene. The releases are from a highly productive team of scientists at the U.S. National Arboretum.

Steffens Receives Silver Medal

Dr. George L. Steffens, Fruit Laboratory, HSI, is the 1986-87 Chairman of the Plant Growth Regulator Society of America. He was presented a silver medal by the Japanese Society for the Chemical Regulation of Plants for active leadership in promoting and developing knowledge about natural and synthetic plant growth regulators. The medal was specially designed and presented on the occasion of the first joint meeting of the two societies held in Honolulu, Hawaii, August 3-7, 1987.

Lunney Organized Meeting in Spain

Dr. Joan Lunney, Helminthic Diseases Laboratory, API, was a coorganizer of the international meeting on "African Swine Fever Virus and Pig Immunology" held in Salamanea, Spain, in November.

Heggestad, Bennett, and Lee Receive EPA's Research Excellence Award

At the International Conference on Assessment of Crop Loss from Air Pollutants at Raleigh, North Carolina, October 25-29, 1987, the Environmental Protection Agency recognized the excellence of air pollution research conducted at the Beltsville Agricultural Research Center. Dr. Howard Heggestad retired in 1984 but has continued to publish one significant paper per year on the effects of drought and ozone stress on soybean yields. Dr. Edward Lee has continued the program that was established some years ago by Dr. Heggestad. Dr. Jessie Bennett has transferred to the ARS Forage and Range Research Laboratory, Logan, Utah.

Stoner Elected Fellow of the American Society of Horticultural Science

Dr. Allan K. Stoner, Director, Plant Genetics and Germplasm Institute, has been recognized for his substantial contribution to horticulture and other plant sciences. Dr. Stoner has made significant contributions to the genetics and breeding of disease resistance in tomatoes. Dr. Stoner has devoted an enormous amount of energy to assure the efficient operation of the National Plant Germplasm System. He serves as Executive Secretary to the 37 Crop Advisory Committees. Dr. Stoner's efforts have been instrumental in clearing a large backlog of introduced plant material through quarantine at the U.S. Plant Introduction Station, Glenn Dale, Maryland.

Nakahara Receives National Award in Regulatory Entomology

Mr. Sueo (Steve) Nakahara, Research Entomologist with the Systematic Entomology Laboratory, BBII, was honored at the national meeting of the Entomological Society of America (ESA) in Boston on November 30, 1987. He received the ESA Distinguished Achievement Award in Regulatory Entomology which is sponsored by the American Association of Nurserymen. The award was given for his exemplary research and service achievements in the taxonomy of thrips, whiteflies, scale insects, and other insect pests with emphasis on solving regulatory problems. Mr. Nakahara was selected from the approximately 9,000 members of the Society.

Bitman Appointed Professor at Georgetown

Dr. Joel Bitman, reemployed annuitant with the Milk Secretion and Mastitis Laboratory, has received an appointment as Adjunct Professor in the Department of Pediatrics, Georgetown University School of Medicine, Washington, D. C.

Huettel elected President of Helminthological Society of Washington

Dr. Robin Huettel, Research Leader of the Nematology Laboratory, was elected President of the Helminthological Society of Washington for 1988.

Heller Elected to ACS Computer Position

Dr. Stephen R. Heller, Research Leader for the Model and Database Coordination Laboratory, was elected to the position of Counsellor of the American Chemical Society (ACS) Computer (COMP) Division for the period 1988-1989. Dr. Heller was also reappointed as Chairman of the Nomination Committee for the ACS COMP Division. In the international field, Heller is the Secretary and Coordinator for the International Union of Pure and Applied Chemistry (IUPAC) Committee on Chemical Databases for the period 1985-1989. Heller was appointed to two additional journal editorial boards this year, "Chemistry International" and "Science Software."

Hefferan Receives Certificate of Merit from University of Illinois

Dr. Colien Hefferan, Research Leader of the Family Economics Research Group in Hyattsville, was honored for her family economics research. She was one of three persons who received a Certificate of Merit from the University of Illinois in a ceremony on September 26, 1987.

Hammerschlag Elected to Gamma Sigma Delta

Dr. Freddi Hammerschlag, Tissue Culture and Molecular Biology Laboratory, PPHI, was elected to the University of Maryland, National Capital Area Chapter of Gamma Sigma Delta, the Honor Society of Agriculture.

NOTES ON TECHNOLOGY TRANSFER

Livestock Insects Laboratory Holds Technology Transfer Event

Dr. Holly Hayes, Research Leader, and the scientists of the Livestock Insects Laboratory, held a very successful technology transfer event on November 20, 1987. The day-long event attracted 16 representatives from the chemical and animal production industries. Presentations and demonstrations included analysis of fly vision to aid in fly trap design; bait formulations for fly traps; controls for the darkling beetle in broiler houses; pest management strategies for poultry and dairy fly control such as pass-through feed compounds, parasitic wasps, and bedding/litter systems; and innovative ways to control Northern fowl mites and ticks. The presentation aroused a great deal of interest which is leading to further discussions with the scientists.

NOTES ON THE HISTORY OF BELTSVILLE

Phytochrome Story Published

To help celebrate the dedication of the Plant Gene Expression Center, Albany, California, ARS published a brochure titled: "A Pigment of the Imagination." This 30-page brochure was written by Mr. Harold McGee. McGee states: "Working over a period of 3 decades, a small group of USDA scientists deduced the existence of a pigment that nearly all plants use to adapt their behavior to light in their environment, and then determined its chemical nature and isolated it in a test tube. Phytochrome, as they subsequently named the pigment, acts as a universal regulator in plant life; it senses the quality of the surrounding light and in the process exerts a strong control on such essential activities as seed germination, stem and leaf growth, and reproduction. At one time suspected by other researchers to be a "pigment of the imagination," the elusive molecule was tracked down in collaboration among several basic and applied laboratories at the Agricultural Research Center in Beltsville, Maryland."

The brochure describes the contributions of Wightman Garner, Harry Allard, Harry Borthwick, Marion Parker, Sterling Hendricks, N. J. Scully, Eben H. and Vivian K. Toole, Lewis H. Flint, E. D. McAllister, Albert Piringer, Warren Butler, Jack Downs, Karl Norris, Harold Siegelman, Hans Mohr, and others.

The brochure concludes with the observation that: "The achievement of Borthwick, Hendricks, and their USDA colleagues is exemplary. It demonstrates the value of a broad approach to biological problems that ranges from the whole organism to the molecule; of cooperative efforts among diverse disciplines, basic and applied; of the full and imaginative uses of resources and results; of steadfast institutional support. It is a story of American science at its best."

Evidence Found for Prehistoric Use of BARC Land

An archeological survey in preparation for the Metro Storage Yard between Indian Creek and the B&O Railroad has been conducted by Louis Berger & Associates, Inc. Prehistoric cultural material was found to depths ranging up to 2.3 feet below the present ground surface. Preliminary analysis suggests that the site was utilized throughout the Archaic Period (ca. 8000 B.C. to 1000 B.C.) as well as the Early Woodland Period (ca. 100 B.C. to 500 B.C.). Intact prehistoric features include three fire-cracked rocks and lithic reduction materials including cobbles, hammerstones, and decortication flakes. The Early Archaic is represented by bifurcate-based and other projectile point styles.

NOTES ON A-76

A-76 Cost Comparison Reaches Appeal Stage

In accordance with OMB Circular A-76, "commercial-type" activities at the Beltsville Agricultural Research Center were submitted to a cost comparison process. Bids were opened on October 28; the inhouse bid proved to be the most economical. The result is being appealed. A final decision will be taken on January 19. The decision is relevant to the careers of more than 200 ARS employees.

NOTES ON ORGANIZATIONAL TITLE CHANGES

The Names of Units Changed

From Soilborne Diseases Laboratory to Biocontrol of Plant Diseases Laboratory

From Soil Nitrogen and Environmental Chemistry Laboratory to Environmental Chemistry Laboratory

From Germplasm Introduction and Evaluation Laboratory to Germplasm Services Laboratory

The responsibility for Animal Operations has been transferred from the Area Director's office to the Animal Science Institute Director's office.

NOTES ON BELTSVILLE SYMPOSIA ON AGRICULTURAL RESEARCH

Beltsville Symposium XIII on Biotic Diversity and Germplasm - Global Imperatives

The next Beltsville Symposium will be held May 9-11, 1988, in the Auditorium of Building 003. The primary purposes of the Symposium are to discuss recent research results and to identify future research needs for diversity and preservation, in relation to major national and international agricultural issues. Speakers will include leading researchers, policymakers, and other experts from Beltsville and from around the world. Along with lecture sessions, there will be computer application demonstrations and guided tours of laboratories at BARC and the U.S. National Arboretum. Poster demonstrations will be under a tent on Circle Drive along with live plantings of research accomplishments. For further information, call one of the co-chairmen, L. Knutson, Director of the Biosystematics and Beneficial Insects Institute (344-3182) or A. Stoner, Director of the Plant Genetics and Germplasm Institute (344-3235).

NOTES ON TAKE PRIDE IN AMERICA

Arboretum Receives Prestigious Award

The U.S. National Arboretum received the 1987 President's Award and plaque by the Professional Grounds Management Society. Mr. Jeffrey A. Bourne, current president of the Society, made the presentation at the awards banquet on November 11, 1987, at the Hyatt Regency in Crystal City. The Society was a founding sponsor of the "Plant a Living Legacy Program" honoring the Bicentennial.

Knutson Receives Award for Developing Symposium

Dr. Lloyd Knutson, Director, Biosystematics and Beneficial Insects Institute, and Professor K. C. Kim of Pennsylvania State University were awarded a Certificate of Merit by the Take Pride in America Program. They were nominated by ARS for developing the major national symposium, "Foundations for a National Biological Survey," sponsored by the Association of Systematics Collections. The symposium and published proceedings recognized the contribution of systematics to the improvement of the condition of our natural resources and included specific emphasis on the relationships between agriculture, environmental quality, and biological diversity in the U.S.

Cathey, March, and Jefferson Receive ARS TPIA Award

Dr. Henry M. Cathey, Director, Mr. S. March, Horticulturalist, and Mr. R. Jefferson, Botanist, U. S. National Arboretum, were selected as the ARS Bronze TPIA plaque winner. They will be among the five TPIA nominees submitted by the Agricultural Research Service to compete at the Department level. The activity entitled "Adopt-A-Tree: Tree Friends" involved school children in the Anacostia community of the District of Columbia who cleaned up areas and planted over 400 new disease and stress resistant flowering crab apple trees donated by a commercial nursery.

Rural Development is One of USDA's Major Goals

Rural Enterprise Teams of the States in the Northeast attended a workshop on the Secretary of Agriculture's Rural Development Initiative. Dr. H. Graham Purchase, Special Scientific Advisor to the Director, and Dr. Yao Chi Lu, Economist in the Model and Database Coordination Laboratory, represented ARS in Maryland. The workshops focused on how the programs of the Department could help revitalize rural America, i.e., provide jobs. As part of USDA's six point rural development initiative, research agencies are charged with increasing their efforts devoted to rural economic development. We will provide the Maryland team with information that can improve the lot of rural farmers.

"JUST SAY NO"

Kinney, Gentner, Bias, and Cathey Speak at Just Say No

The Beltsville Area is pulling its weight in the national "Just Say No" program. We are sponsoring two important seminars in January and are expecting a good turnout. Family, friends, and interested public in the Beltsville Area are invited to the Auditorium, Building 003, at 12 Noon to 1 p.m. on January 12 and 19.

On Tuesday, January 12, Dr. Walter Gentner, Research Leader of the Narcotics Laboratory and Technical Advisor on Narcotics, will present a program on alcohol and other drugs. He will show samples of the substance abuse drugs and give you the opportunity to smell marijuana burning. Dr. Kinney, Administrator of ARS, will also make a presentation.

Dr. Gentner recently participated in the Voice of America International Training Center's News and Current Affairs Workshop on Drugs. One journalist who attended said "I was under the impression that we journalists in Mexico knew all there is to know about drugs. I did not expect to find anything as interesting as we experienced there. But I now find myself with one of the most enriching experiences of my life as a journalist."

On Tuesday, January 19, Mrs. Leonice Bias, mother of Len Bias, will be the featured speaker. Since the death of her son, Mrs. Bias has spent much time on the lecture circuit on drug education. She is an excellent speaker on this subject. If you have not had the opportunity to hear her, you will not want to miss this valuable program.

Dr. Cathey will be making presentations on "Just Say No" as part of his Living Legends Program at the U.S. National Arboretum at 1:30 p.m., February 3 and 7, 1988.

NOTES ON BELTSVILLE AREA EXPLORER POST 1810

Beltsville Area Sponsors Explorer Post

Beltsville Explorer Post 1810 provides young adults, male and female members ages 14 to 21, an opportunity to explore a common interest in agricultural and life sciences. On November 19, 1987, 11 members of Post 1810 journeyed to Fort Detrick, Maryland, for supper at the Officer's Club and a visit to the Foreign Disease-Weed Science Research Laboratory. Dr. Gerald Leather gave a stimulating presentation covering his personal research on allelopathy and traced the history of Fort Detrick as a research facility. For more information on BARC Explorer Post 1810 and upcoming programs, contact Dr. Judith B. St. John, Research Leader of the Weed Science Laboratory (344-3873).

NOTES ON RESEARCH

Factors Affecting Mating Behavior of Corn Earworm Discovered

Females of Heliothis species, like most other moths, produce and release sex pheromones to attract their mates. A neuropeptide hormone (pheromone biosynthesis activating neuropeptide) induces the production of sex pheromone in the female. In female moths, mating terminates pheromone production. Evidence has been obtained by Dr. Ashok K. Raina of the Insect Chemical Ecology Laboratory that the male corn earworm transfers a factor to the female during mating, and this factor probably blocks the release of the neurohormone and stops pheromone production. The females commence oviposition immediately after mating. In the absence of a suitable host, the resulting progeny would have no chance of survival. It appears that Heliothis species have evolved a mechanism to prevent such a situation. The strategy lies in stopping pheromone production and release and thus preventing the possibility of mating in the absence of a host plant. This is achieved through a signal in the form of a volatile factor from the host plant that causes the release of the neurohormone which in turn initiates pheromone production. Thus, close association with a host plant is necessary for mating, fertile egg production, and survival of the species. Understanding these relationships could provide mechanisms to disrupt an important step in the reproduction of these pest insects and lead to their control. Members of the genus Heliothis constitute some of the very important crop pests throughout the world. (For more information, contact A. K. Raina, 344-4396)

Newly Recognized Fatal Protozoan Disease of Dogs

Toxoplasmosis is a protozoan parasite infection caused by Toxoplasma gondii. It affects all warm-blooded animals including livestock and man. Toxoplasmosis can be fatal in dogs and usually occurs in association with distemper virus infection. Dr. J. P. Dubey of the Protozoan Diseases Laboratory in cooperation with scientists at the Angell Memorial Animal Hospital, Boston; Montana State University, Bozeman; The Armed Forces Institute of Pathology, Washington; and scientists in Sweden have recognized a clinical disease similar to toxoplasmosis but caused by a new parasite. The new parasite, Neospora caninum, is structurally distinct from T. gondii, and its developmental stages were found in many tissues of dogs especially the brain and spinal cord. The main lesions observed were meningoencephalomyelitis and myositis. Descriptions of the lesions and the parasite structure will help in the diagnosis of this disease in the future. (For more information, contact J. P. Dubey, 344-2128)

Treating Pigs with Porcine Growth Hormone Resulted in Leaner but Less Tender Meat

Somatotropin (growth hormone) plays a key role in regulating metabolism and in partitioning absorbed nutrients between muscle and fat. Dr. Morse B. Solomon, coworkers in the Meat Science Research Laboratory, and in the Animal Research Institute, Weeribee, Australia, administered the growth hormone to castrated male pigs weighing 25-55 kg body weight. This resulted in an increase in muscle mass and decrease in carcass fat. Thus, administration of the hormone resulted in an increase in the size of all three muscle fiber types in the loin eye area (14 percent) and in shear force required to break muscle fibers (17 percent), but there was a concomitant decrease in subcutaneous fat (36 percent) and total carcass fat (31 percent). Restricted feed intake resulted in less change than ad libitum feeding. The dramatic improvement in productive efficiency with resulting increase in lean tissue and decrease in fat content suggests that the use of porcine growth hormone will provide an overall benefit to swine producers and consumers. (For more information, contact M. Solomon, 344-1713)

Transgenic Tobacco Plants Produce Seeds Containing Maize Protein

Many crop plants, particularly legume seeds, have less sulfur than optimal for animal nutrition. Conventional plant breeding techniques have not improved the sulfur content of these crops. Dr. Eliot M. Herman of the Plant Molecular Genetics Laboratory and coworkers from Agrogenetics placed the maize 15 kd zein structural gene under the regulation of french bean B-phaseolin gene flanking regions. Agrobacterium tumefaciens-mediated transformation was used to insert the chimeric phaseolin-zein gene into the tobacco genome. Transgenic plants synthesized zein in a tissue specific manner during the latter half of seed development. In seeds, zein, which could reach as much as 1.6 percent of the total seed protein, was correctly processed by removal of the 20 amino acid signal peptide. Electron microscope immunogold techniques localized the zein in the protein body crystalloid, particularly in the embryo. Thus, a high sulfur storage protein gene can be incorporated and induced to function with the result that the seed accumulates significant quantities of the protein. This technology could lead to the development of crop plants with a more nutritionally balanced level of sulfur containing proteins. (For more information, contact E. Herman, 344-3258)

Soybean Cells Transformed with Auxin Gene Regenerate Roots

Progress toward regeneration of soybean plants from cultured cells has been made by using the natural gene vector Agrobacterium to transfer genes into soybean cells. Drs. Lowell D. Owens and A. C. Smigocki of the Tissue Culture and Molecular Biology Laboratory have improved the efficiency of gene transfer by transferring genes that code for the production of two plant hormones, auxin and cytokinin. Cell lines transformed with the auxin gene produced high levels of auxin and regenerated roots. Nontransformed soybean lines did not regenerate roots even when high levels of synthetic auxin were added to the medium. These results establish the important principle that gene transfer techniques can cause tissues to be regenerated when hormone additions to the culture medium fail. This opens the way to experiments with an engineered cytokinin gene that might be expected to induce shoot formation. Techniques that facilitate the regeneration of whole soybean plants from cultured cells or tissues will accelerate the application of new plant biotechnologies to the improvement of soybean production. (For more information, contact L. D. Owens, 344-2103)

NMR Imaging Detects Core Breakdown in Pears

Using nuclear magnetic resonance (NMR) imaging, Dr. Chien Yi Wang, in cooperation with scientists at Georgetown University, visualized the core breakdown in pears. 'Bartlett' pears were stored in air or in 1 percent oxygen at $0^{\circ}C$ for 3 months and then transferred to air at $20^{\circ}C$. The progress of the core breakdown within the fruit could be revealed without destroying the fruit. A distinct difference in the degree of core breakdown between air and low oxygen stored fruit could be discerned in the NMR images. Because core breakdown is a serious problem in 'Bartlett' pears during and after storage, and because affected tissues are not visible from the outside of the fruit, it is difficult to determine if the fruit has developed core breakdown without cutting it open. The NMR technique can be used to segregate healthy and affected fruit before shipping or processing and thus, can improve market quality of pears. (For more information, contact C. Y. Wang, 344-2128)

The Year of the Sweet Potato Whitefly

Dr. R. H. Lawson and Mrs. M. M. Dienelt of the Florist and Nursery Crops Laboratory will remember 1987 as the year of the sweet potato whitefly. Whiteflies have been around a long time, but, beginning in 1987, whiteflies posed a serious threat to vegetable and ornamental crops. The sweet potato whitefly, Bemisia tabaci, was particularly damaging. Control of whiteflies is complicated because they may rapidly develop resistance to insecticides. A major whitefly infestation occurred in 1987 and was associated with the transmission of several viruses, mostly in the geminivirus group. Some of the viruses were difficult to detect, and, by the time the problem was discovered, the crop was devastated. In particular, the occurrence of lettuce infectious yellows virus in iceberg lettuce grown in southern Arizona and California resulted in high prices due to reduced yields and shortages in lettuce supply. Better control of whiteflies and more rapid diagnosis of virus infections could reduce lettuce crop loss. (For more information, contact R. H. Lawson, 344-3570)

NOTES ON CASH AWARDS

Cash Awards

C. W. Alston, Tractor Operator, Farm Management Branch, DO - Outstanding performance of assigned duties in the Research Plots Section of the Farm Management Branch.

Ralphine V. Andrews, Clerk Typist, Meat Science Research Laboratory, ASI - For sustained superior performance as a clerk typist in providing administrative and clerical support to the Meat Science Research Laboratory which aided in the achievements of the Laboratory.

Loring I. Benedict, Jr., Gardener Foreman, USNA - For outstanding leadership in coordinating the planting of the National Country Garden.

Sharon M. Biles, Clerk Typist, Systematic Botany, Mycology and Nematology Laboratory, BBII - For performing in a superior manner, particularly (1) in taking over the responsibilities of a higher grade worker who was reassigned, and (2) in working on a special project that required learning new skills.

Jill Bloom, Biological Laboratory Technician, Soilborne Diseases Laboratory, PPI - Special achievement award for superior performance in maintaining an active research program during the 6-month period of absence of her supervisor during a critical stage in the research program and for her devotion to the development of the biocontrol fungus Gliocladium.

Donna M. Brocht, Biological Laboratory Technician, Biochemistry, Nonruminant Animal Nutrition Laboratory, ASI - For exceeding assigned duties in collecting and analyzing samples during two growing pig experiments, and for organizing the experimental data so as to permit expeditious statistical analyses.

Jean E. DeMouy, Biological Aid (Plants), USNA - Sustained superior performance in all phases of maintenance associated with the Boxwood/Perennial and Aquatic Gardens.

John C. Eastep, Jr., Gardener, Motor Vehicle Operator, U.S. Plant Introduction Station, PGGI - For the willingness to learn new techniques and to accept increased responsibilities and for continued dedication to the successful operation of the U.S. Plant Introduction Station.

Howard M. Edelstein, Agricultural Research Technician (Soils), Soil Microbial Systems Laboratory, AEQI - Outstanding technical assistance in the study of the effects of organic matter on soil physical properties.

Mark L. Failla, Research Microbiologist, Vitamin & Mineral Nutrition Laboratory, BHNRC - In recognition of providing sustained encouragement and assistance to a supervised employee obtaining his high school diploma.

Adelaide B. Grier, Biological Aid, Research Unit, USNA - Continued Superior Mounting of Herbarium Specimens at the Herbarium at the U. S. National Arboretum.

Richard F. Griffin, Biological Aid Technician, Nitrogen Fixation and Soybean Genetics Laboratory, PPHI - This award is in recognition of sustained superior performance in the daily management and servicing of the USDA Rhizobium Culture Collection and the assembly of the 2nd edition catalog.

Mary Ann Guaragna, Biological Technician (Microbiology), Florist & Nursery Crops Laboratory, HSI - In recognition and appreciation of superior and sustained performance of hybridoma and molecular techniques in support of plant virus-related research projects.

May N. Inscoe, Insect Chemical Ecology Laboratory, AEQI - For dedicated and sustained superior service for technical assistance and technology transfer activities related to pheromones and other attractants.

Rose T. Mayhew, Model and Database Coordination Laboratory, ASRI - In recognition of your excellence in preparing and maintaining the ARMP, CRIS, and LOTS laboratory activities.

Toni M. McCannon, Biological Laboratory Technician, Biochemistry, Milk Secretion and Mastitis Laboratory, ASI - Exceptional performance and perseverance in obtaining $10,000 reimbursement from compensation for valuable tissue samples which were destroyed while under their care.

Miguel L. McCloud, Agricultural Research Technician, Plant Stress Laboratory, PPHI - For outstanding performance in the operation of a soil-plant analytical laboratory and in the training of students and research collaborators.

Michael B. McMahon, Biological Laboratory Technician, Plant Stress Laboratory, PPHI - For the development of improved methods for the isolation and characterization of plant plasma membranes from a variety of sources.

Maureen J. Mello, Biological Laboratory Technician (Insects), Systematic Entomology Laboratory, BBII - For exemplary, sustained achievement in performing laboratory technician duties especially in the area of thrips, whiteflies, and aphid slide preparation.

Richard W. Miller, Research Animal Scientist, Livestock Insects Laboratory, AEQI - For demonstrated leadership coordinating laboratory and field research for both the Federal and State sectors on integrated pest management flies affecting cattle and in organizing the 1987 Livestock Insects Work Conference.

Charles L. Ousler, Physical Science Technician, Insect Chemical Ecology Laboratory, AEQI - For superior accomplishment in the Mediterranean fruit fly attractant project.

Claude L. Price, Tractor Operator, U.S. Plant Introduction Station, PGGI - For willingly accepting additional responsibilities for Station repairs and maintenance during the recent period of transition.

Claire E. Reese, Clerk Typist, Soil Microbial Systems Laboratory, AEQI - For outstanding performance of duties as clerk-typist for the Soil Microbial Systems Laboratory.

William V. Rumpler, Research Physiologist, Energy & Protein Nutrition Laboratory, BHNRC - For superior accomplishment in completing installation, calibration, and operation of the room calorimeter.

Sharon M. Schleupner, Secretary (Typing), Biocontrol of Plant Diseases Laboratory, PPI - For exceptional performance in handling the 1988 budget and developing an excellent system to follow the expenses incurred by the Biocontrol of Plant Diseases Laboratory.

James L. Seale, Research Biomedical Engineer, Energy and Protein Nutrition Laboratory, BHNRC - For superior accomplishment in completing installation, calibration, and operation of the room calorimeter.

Carey W. Spence, Agricultural Research Technician, Narcotics Laboratory, AEQI - For devotion, extended effort and excellence in performance of duties in the Narcotics Laboratory under stressful and adverse conditions.

Rebecca L. Stanger, Biological Laboratory Technician, Systematic Entomology Laboratory, BBII - For outstanding performance in proofing and editing the systematic database of the cutworms of the World.

Patricia A. Steelman, Secretary (Typing), Hydrology Laboratory, ASRI - For sustained, outstanding performance of secretarial duties in support of the Hydrology Laboratory.

Doris M. Shirey, Clerk Typist, Beltsville Area - In recognition of your dedication and excellence in support of the intermittent clerk-typist program under the BA Director's Office.

Patricia Kimle To, Biological Laboratory Technician, Insect Pathology Laboratory, PPI - For sustained outstanding performance in support of research on the environmental role of Bacillus thuringiensis.

Rosemary C. Walsh, Plant Pathologist, U.S. Plant Introduction Station, PGGI - For continued dedication to and concern for improved safety at the U.S. Plant Introduction Station.

Martin L. Weinrich, Clerk Typist, Insect & Nematode Hormone Laboratory, PPI - For showing commendable initiative and dependability during a particularly demanding time in the Insect & Nematode Hormone Laboratory.

NOTES ON QUALITY INCREASE AWARD

Quality Increase Award

Dennis R. Smith, Microbiologist, Microbiology & Plant Pathology Laboratory, PPI - For sustained outstanding performance in viroid research and technology transfer to visiting scientists.

NOTES ON INVENTION AND PATENT AWARDS

Invention and Patent Awards

Richard T. Brown, Physical Science Technician, Analytical Chemistry Laboratory, AEQI - Initial Invention Award $100.00 for Serial No. 07/055,265, "Process for the Preparation of Ketones and Novel Insecticides Produced Therefrom."

Howard R. Gamble, Research Zoologist, Helminthic Diseases Laboratory, API - Initial Invention Award $100.00 for Serial No. 07/068,499, "Vaccine for Swine Trichinosis."

Jack A. Lewis, Research Soil Scientist, Soilborne Diseases Laboratory, PPI - Invention Award for U.S. Patent No. 4,668,512, entitled "Preparation of Pellets Containing Fungi and Nutrient for Control of Soilborne Plant Pathogens."

Phyllis A. W. Martin, Research Microbiologist, Insect Pathology Laboratory, PPI - Initial Invention Award $100 for Serial No. 07/050,450, "Acetate Selected Bacillus thuringiensis and the Method of Use."

Terrence P. McGovern, Research Chemist, Insect Chemical Ecology Laboratory, AEQI - Initial Invention Award $100 for Serial No. 042,920, "Persistent Attractants for the Mediterranean Fruit Fly."

Frank D. Mills, Research Chemist, Analytical Chemistry Laboratory, AEQI - Initial Invention Award $100 for Serial No. 07/055,265, "Process for the Preparation of Ketones and Novel Insecticides Produced Therefrom."

Giles D. Mills, Jr., Entomologist, Livestock Insects Laboratory, AEQI - Initial Invention Award $100 for Serial No. 07/055,265, "Process for the Preparation of Ketones and Novel Insecticides Produced Therefrom."

K. Darwin Murrell, Associate Director, BA - Initial Invention Award $100 for Serial No. 07/068,499, "Vaccine for Swine Trichinosis."

30-40 YEARS OF GOVERNMENT SERVICE

Reception Held for 30-40 Years of Service

A reception was hosted by the Beltsville Area Office and attended by supervisors and Institute Directors to recognize Charles W. Woods, George W. Pittarelli, Samuel L. Spencer, Robert W. Goth, David R. Lee, Charlie Jackson, Jr., and L. C. Frazier for completing 3 decades of government service; and to Roland M. Jefferson, for completing 4 decades. The employees were congratulated and presented with beautifully engraved plaques.

EPILOGUE

Epilogue

People don't care how much you know until they know how much you care.

Waldemar Klassen

WALDEMAR KLASSEN
Director

Beltsville Area
Notes
From the Director

Agricultural Research Service
United States Department of Agriculture
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NOTES ON REALIGNMENT

Deputy Area Directors Welcome to Beltsville Area

A realignment of the Beltsville Area was announced on January 21, 1988. The 10 former Institutes were consolidated into 4 new Institutes. Four full-time Deputy Area Directors have been selected as follows: National Resources Institute - Dr. Philip C. Kearney; Plant Sciences Institute - Dr. James H. Elgin, Jr. with Dr. Julius J. Menn as Associate Deputy Area Director; Livestock and Poultry Sciences Institute - Dr. Thomas J. Sexton; and Product Quality and Development Institute - Dr. Don D. Bills.

Dr. Kearney received his B.S. and M.S. from the University of Maryland and his Ph.D. from Cornell University. His postdoctoral research at Michigan State University was funded by the National Science Foundation. Dr. Kearney has been employed by ARS at BARC since 1962. He has held high offices in IUPAC and other professional societies and was selected as the ARS Distinguished Scientist of the Year in 1987.

Dr. Elgin received his B.S. and M.S. from the University of Maryland, and his Ph.D. from Pennsylvania State University. Dr. Elgin has 20 years of research experience and has worked in ARS at University Park, Pennsylvania; Prosser, Washington; and Beltsville, Maryland. In 1986, he joined the National Program Staff and served as National Program Leader for Forage, Pasture, and Turf. Dr. Elgin is U.S. representative to OECD and responsible for administration of OECD Seed Schemes in the United States.

Dr. Menn received his B.S., M.S., and Ph.D. from the University of California, Berkeley. He joined ARS in 1985 as the National Program Leader for Crop Protection. His honors include receiving the Burdick and Jackson International Award for Research in Pesticide Chemistry in 1979 and, in 1973, being selected as a Fellow of the American Chemical Society.

Dr. Sexton received his B.S. from Delaware Valley College, his M.S. from the University of New Hampshire, and his Ph.D. from the Pennsylvania State University. Dr. Sexton joined ARS as a Research Physiologist following graduation from Penn State. His honors include the ARS Distinguished Scientist of the Year Award in 1987 and, in 1986, the National Turkey Federation Research Award.

Dr. Bills received his B.S., M.S., and Ph.D. degrees in Food Science and Chemistry at Oregon State University. In 1975, he joined ARS at the Eastern Regional Research Center in Philadelphia as Chief of the Plant Products Laboratory. Dr. Bills has held various offices in the American Chemical Society and the Institute of Food Technologists.

With regard to the former Institute Directors, Dr. Burt Endo had already indicated his desire to return to the bench in the Nematology Lab. Dr. Mike Faust will return to his former position as Research Leader of the Fruit Laboratory. Dr. Ed Civerolo, who currently is the Research Leader of the Fruit Lab has decided to join the National Program Staff. Dr. Ron Fayer has been invited to be Research Leader of a new Zoonotic Diseases Lab. Zoonoses are diseases that people get from animals--for example, toxoplasmosis. Dr. Jim Hilton had previously accepted the position of Associate Director of the South Atlantic Area, headquartered in Athens, Georgia. Dr. Lloyd Knutson is serving as Special Advisor for Biosystematics and Biocontrol. Dr. Lew Smith elected to join the National Program Staff. Dr. Allan Stoner is the Research Leader of the Germplasm Services Lab. Dr. Glen Vanden Berg has been assigned to assist Dr. Bills in managing the Product Quality and Development Institute.

We all know that invariably there is a large human cost in adjusting to a new realignment. Also, this realignment will increase the amount of money needed for administrative support. So what do we hope to accomplish by this realignment? We have three major objectives: Firstly, we want to free up the Area Office somewhat to focus more effectively on the major over-arching issues including broad program development, modernization of equipment and

facilities, urban encroachment, master planning, etc. Secondly, we want to achieve a greater coherency in developing the scientific program in relation to the strategic objectives of the ARS Program Plan. Thirdly, we want to subtantially strengthen administrative services support to our Research Leaders and Bench Scientists. Currently, this level of support is one-half of that in other Areas of ARS.

New Laboratory Formed in Livestock and Poultry Sciences Institute

A new laboratory, Zoonotic Diseases Laboratory, has been formed in the Livestock and Poultry Sciences Institute. The Research Leader for the new program is Dr. Ron Fayer. This Laboratory will conduct research on important zoonotic diseases such as toxoplasmosis and sarcocystosis. Establishment of this new Laboratory will enhance ARS's ability to focus on emerging problems in agriculture stemming from parasites that may compromise the safety of food. Also joining this Laboratory will be Dr. J. P. Dubey, a leader in the effort to understand and control toxoplasmosis. Both Drs. Fayer and Dubey have been honored repeatedly for their outstanding scientific accomplishments and their involvment in this program will bring instant international recognition to the Laboratory.

Administrative Support During Realignment

The heavy demands placed on the Beltsville Area staff to develop and implement the realignment and increased administrative support to the Laboratories and Area Director required urgent and extraordinary action. This was met initially by detailing Ms. Jane L. Giles from the General Services Division to the position of Deputy Area Director for Facilities Management and Operations. Under her direction, and with the support of the top management of ARS Administrative Management, she quickly assembled a temporary team to both attend to the day-to-day operations of the Area and to develop the new administrative support plan. Mr. Larry Lofton, Area Administrative Officer for the South Atlantic Area, is directing the Area's Administrative Office. Because of the recent departure of Mr. Anthony Kelly, Mr. Ed Wolfe, Safety and Health Officer for the South Atlantic Area, has been detailed to Beltsville to handle a number of urgent safety issues confronting the Beltsville Area. Ms. Kathy Michels from the Financial Management Division will provide

assistance to the Beltsville Area Budget and Fiscal staff until Mr. Rob Hollman, Area Budget and Fiscal Officer, returns from extended sick leave. To assist with the large and complex budgetary changes associated with the realignment, Mr. Warren Moss, formerly with the ARS Budget and Fiscal Office, agreed to "come out of retirement" for awhile to provide needed expertise. We in the Beltsville Area are highly appreciative for the availability and dedication of these people. Without their efforts, the realignment of Beltsville would have been severely handicapped. We are also grateful to the South Atlantic Area for their spirit of cooperativeness making some of their most critical staff available to us.

NOTES ABOUT OUR SCIENTISTS

Agricultural Biotechnology and the Public

Dr. Freddi A. Hammerschlag appeared on the Plant Panel and Dr. Michael D. Ruff on the Animal Panel in Raleigh, North Carolina, on February 22-24, 1988, and Dr. R. J. Griesbach on the Plant Panel and Dr. H. Graham Purchase on the Animal Panel at New Brunswick, New Jersey, on April 18-20, 1988. The Panels are a part of Regional Workshops on "Agricultural Biotechnology and the Public" sponsored by the U. S. Department of Agriculture in cooperation with the Land Grant Universities and the Agricultural Experiment Stations. They are sequels to the National Workshop held at Airlie House in Virginia on "Public Perceptions of Biotechnology" edited by L. R. Batra and W. Klassen and sponsored by the Agricultural Research Institute, Bethesda, Maryland, and the "Secretary's Challenge Forum on Biotechnology" held at the Department in February. The workshops involve scientists, journalists, government officials, industry representatives, farmer/ranchers, and food processors, in exploring the practical applications of biotechnology and how it affects the way we live - what we eat - what we wear - our personal health - our environment - our future.

Drea Holds Office in Organizations of Entomologists

Dr. Jack J. Drea, Research Leader of the Beneficial Insects Laboratory, BBII, was elected member-at-large, Nearctic Region, International Organization of the Biological Control of Noxious Animals and Plants. He was also elected to membership on the Board

of the Chesapeake Chapter, American Registry of Professional Entomologists.

Larew on AAAS Fellowship

Dr. Hiram G. Larew, Research Entomologist in the Florist and Nursery Crops Laboratory, HSI, is currently on a one-year fellowship sponsored by the American Association for the Advancement of Science through their Science, Engineering and Diplomacy Fellowship Program. His assignment is with the Agency for International Development, Science and Technology Branch, Office of Agriculture, where he is reviewing, adapting, and guiding international pest management programs.

Thompson receives 1987 Hillebrand Prize

Each year since 1924, the Chemical Society of Washington has presented the Hillebrand Prize--a certificate and $1,000 cash award--for research. Dr. Malcolm Thompson received the prize for his pioneering research on insect hormones. He was instrumental in the first isolation and identification of seven of the first eight ecdysteroids (insect molting hormones) isolated from insects and has synthesized the most comprehensive series of ecdysteroid analogs reported to date. Recently, Dr. Thompson made important new contributions to the metabolism of sterols in insects and to the chemistry and biochemistry of ecdysteroids and their conjugates. He also led the team that synthesized the plant growth promotant brassinolide and a series of related compounds. The practical significance of this hormone is that it increases crop yield, biomass, plant stress tolerance, and plant disease resistance. A second Hillebrand Prize was awarded to Dr. N. B. Mandava. Dr. Mandava was formerly a member of the Beltsville team that isolated the brassinosteriods.

Johnson receives T. W. Edminster Award

Dr. Lawrence A. Johnson of the Reproduction Laboratory, submitted the Research Associate Proposal that received the 1988 T. W. Edminster Award. With an associate, Dr. Johnson plans to identify sex-specific surface antigens on sperm. Through their use, the gender of offspring of food animals could be preselected. Success with this procedure could have great impact on animal science, agriculture, and even human medicine.

Guttman elected to Board of Directors of American Running and Fitness Association

At their February meeting, the Executive Committee of the Board of Directors of the American Running and Fitness Association elected Dr. Helene N. Guttman, Acting Research Leader of the Family Economics Research Group to a 3-year term as member of the Board. She has been on the Editorial Board of the AFRA's publication "Running and Fitness" since 1985.

Solis Receives Award at University

Ms. Alma Solis, who is working in the Systematic Entomology Laboratory, has been selected as one of the outstanding Cooperative Education Students at the University of Maryland for 1987. Alma is a graduate student in a cooperative program called the Maryland Center for Systematic Entomology that is jointly funded by the Systematic Entomology Laboratory, the Department of Entomology at the University of Maryland, and the Smithsonian. She is working on her dissertation on a group of economically important moths which she hopes to complete in 1989. Dr. Douglas Ferguson of the Systematic Entomology Laboratory is her "outside" major professor.

NOTES ON RESEARCH

Insulin-like Growth Factor-1 Significantly Affects the Incorporation of Nutrients in Forage into Meat Products

Numerous hormones that occur naturally in growing animals affect the incorporation of ingested nutrients into meat products. Especially important among these hormones hormones is one referred to as insulin-like growth factor-1 "IGF-1", a peptide hormone that is known to increase the uptake of energy and amino acids by cells and thereby increase the incorporation of nutrients into protein. Steers were fed diets with different levels of protein and energy and injected daily intramuscularly with bovine growth hormone. Basal plasma IGF-1 increased with increase in protein level of the diet. Also, plasma IGF-1 and average daily protein accretion were significantly correlated. Injection of bovine growth hormone increased plasma concentrations of IGF-1 in all steers equally regardless of diet, even though basal concentrations varied. Thus, dietary crude protein was the major dietary component that was responsible for regulating plasma concentrations of IGF-1 and protein deposition was highly correlated to the plasma concentrations of IGF-1. The data suggests that

efforts to regulate IGF-1 may have significant effects on the incorporation of nutrients into protein in cattle. Injection of bovine growth hormone may be only one of many methods of regulating IGF-1 that can result in more lean meat from animals. (For more information, contact T. H. Elsasser, 344-2281)

Bacterial Citrus Canker Endemic in Florida

Outbreaks of an apparently new form of citrus is bacterial canker disease in Florida citrus nurseries since 1984 have resulted in the destruction of 20 million nursery trees. Restriction fragment length polymorphisms were used to compare the physical organization of the genomes of 14 strains of Xanthomonas campestris associated with the disease with that of recognized strains of X. campestris pv. citri. The analysis showed that the X. campestris strains associated with the nursery disease were not closely related to any recognized strain of X. campestris pv. citri and are probably not members of pv. citri. A new pathovar designation should be given to this group of strains. The analysis showed three distinct but related clonal groups among the 14 strains from citrus nurseries. This is inconsistent with the pathogen having been introduced from outside the United States since multiple introductions would have been required. The pathogen is almost certainly endemic in Florida and the disease should be referred to as citrus bacterial spot disease instead of citrus bacterial canker disease.
(For more information, contact J. S. Hartung, 344-3374)

Menthol Cures Honey Bees of Mites

The Honey Bee tracheal mite was first found in the United States in 1984. Since then, mite infestations in honey bees have been reported in 28 of the 48 contiguous states. Mite infested colonies were not able to produce surplus honey (for humans) and brood production was reduced. Infestation of the mite could lead to death of the colony. There is no chemical registered in the United States for the control of this mite though several promising materials are currently being tested. Menthol crystals were placed at various locations within the colony. Samples of bees were collected every 3 weeks for 14 weeks and trachea were examined for the presence of mites. The best method of control in colder climates was to place the menthol in an envelope

made of plastic window screen directly over the winter cluster of bees. Effective control did not begin until after the second treatment of menthol when day time temperatures reached over 21°C (70°F) which seemed to be the minimum day time temperature required for the vaporization of menthol. All eight treated colonies were freed of mites. This data will be useful in the registration of menthol for mite control. It could prevent the mite from becoming a serious economic problem for all crops that require bee pollination. (For more information, contact E. W. Herbert, Jr., 344-3970)

Rapid Method for Identifying Sweet Potatoes Tolerant to Herbicides

Sweet potatoes are an economically important crop, particularly for production of dehydrated flakes. Metribuzin is the most economical and effective herbicide for the control of broad-leaf weeds that commonly occur in sweet potatoes. Use of metribuzin for weed control in sweet potatoes is limited, however, because many sweet potato varieties are sensitive to it. Cultivars with increased tolerance to metribuzin have been found by laborious classical screening procedures. The biochemical basis for tolerance was examined in 11 sweet potato cultivars showing a wide range to metribuzin. Lipolytic acyl hydrolase activity was found to be inhibited by very low levels of metribuzin in leaf homogenates from sensitive clones and there was a clear 10-fold concentration difference in this reponse in tolerant clones. Other enzymes were also inhibited though to a lesser degree indicating that metribuzin tolerance in sweet potatoes is due to multiple biochemical mechanisms. However, lipolytic acyl hydrolase activity was inhibited least by metribuzin in tolerant cultivars. Thus, this enzyme assay provides breeders a rapid method for identifying sweet potato cultivars tolerant to metribuzin. It is also an important step toward explaining the mechanism of metribuzin tolerance in sweet potatoes. (For more information, contact H. A. Norman, 344-3471)

Biodegradation of Pesticides in Wastewaters

For several years, scientists in the Pesticide Degradation Laboratory have been developing methods for the destruction of pesticide residues in wastewaters. Lack of simple waste-water disposal technology has been a major factor in movement of pesticides into

groundwater. The use of ozone, a powerful oxidant, combined with microbial metabolism has been shown to be an effective system for destroying formulated solutions of pesticide. The chemical reactions and products caused by ozone and microbial metabolism of those products have been described for atrazine. Oxidation was first order in ozonized solutions of formulated atrazine and had a half-time of 16 minutes. Atrazine oxidation was more rapid under alkaline conditions. Degradation of atrazine proceeded by addition of oxygen to the alkylamino group, dealkylation, deamination, and dehalogenation. Atrazine is the major corn herbicide in the United States and has been detected in groundwater. Based on these results, a large wastewater disposal unit has been designed. If the technology is widely used, a major source of groundwater pollution could be eliminated.

Interactions with Historically Black Colleges and Universities

Several laboratories at Beltsville developed cooperative arrangements with historically black colleges in FY 1987. The Germplasm Quality and Enhancement Laboratory cooperated with Delaware State College, Dover, Delaware, on research to improve the nutritional quality of forage in the Northeast. The Vegetable Laboratory continued informal research with Fort Valley State College, Fort Valley, Georgia, on potato germplasm evaluation for resistance to environmental stress such as frost, high temperature, and drought. The research has been expanded to include chip quality evaluation in cooperation with Frito Lay, Inc. at nearby Perry, Georgia. The Insect Reproduction Laboratory cooperated with Howard University, District of Columbia, in determining the effects of ecdysteroids on developmental programming of insect tissues. The Germplasm Introduction and Evaluation Laboratory provided advice on sources of seed that produced high levels of unique oils for a chemist at Howard University. The Insect Reproduction Laboratory cooperated with a research scientist from Howard University on identifying the structure and function of junctions between the membranes of cells which envelope developing insect germ cells. They discovered a new type of cell junction which functions to impede the movement of certain molecules into the area containing germ cells. The Reproduction Laboratory is cooperating with

Howard University Medical School, District of Columbia, on copper and zinc phosphorylation in the plasma membranes of spermatozoa. In addition, scientists participated in the Lecture Series at Delaware State College and gave lectures at Howard University and the University of the District of Columbia. Contacts were made with virtually all historically Black colleges and universities to recruit individuals for cooperative education and scientist positions. Meetings were held with professors from the University of Maryland Eastern Shore and Tuskegee University, Tuskegee, Alabama, on tissue culture techniques.

NOTES ON INVENTION AND PATENT AWARDS

Novel Approach to Improving Nitrogen Fixation

Perry B. Cregan, Harold H. Keyser and Michael J. Sadowsky, Nitrogen Fixation and Soybean Genetics Laboratory, PPHI - Patent application filed August 20, 1987, on "Novel Approaches Useful for the Control of Root Nodulation of Leguminous Plants." Inventors are eligible for $100 invention award.

NOTES ON RECOGNITION OF MERIT

Certificate of Merit

George A. Hobbs, Engineering Equipment Operator Foreman, Farm Management Branch, DO - By upgrading land areas that were perceived as nonfunctional and unsightly into functional research plot land, or improving the overall esthetics, thus creating a more appealing environment.

Joan V. Tishue, Secretary (Typing), Avian Physiology Laboratory, ASI - For outstanding performance rating by typing technical manuscripts and letters.

Congratulations to Dr. Helene Guttman, Beltsville Human Nutrition Center, who received a certificate for her work on the CFC Campaign and to Dr. K. Darwin Murrell, Beltsville Area Office, who received a certificate for successful completion of the career executive development program.

NOTES ON CASH AWARDS

Cash Awards

Brian E. Atkin, Biological Laboratory Technician, Helminthic Diseases Laboratory, API - For instituting new management procedures for the SLA inbred miniature swing herds that have resulted in increased productivity of these animals.

Richard E. Barr, Jr., Animal Caretaker, Vitamin and Mineral Nutrition Laboratory, BHNRC - For continued self-improvement that has resulted in the excellent daily care of laboratory animals for micronutrient studies.

Joseph Hall - Laboratory Worker, Carbohydrate Nutrition Laboratory, BHNRC - In appreciation, the investigators of the Beltsville Human Nutrition Research Center recognize the regular and conscientious performance of your duties as a laboratory worker, especially for maintaining clean animal caging which is critical to the success of their research.

Donald T. Krizek, Plant Physiologist, Plant Stress Laboratory, PPHI - For research efforts to increase our knowledge and understanding of plant stress.

Edward H. Lee, Plant Physiologist, Plant Stress Laboratory, PPHI - For research contributions on the effects of air pollutants on plants.

Sylvester G. March, Supervisory Horticulturist, USNA - For superior performance in the selection of plants, coordination of design, and the presentation of introductions on the grounds of the U. S. National Arboretum.

Nancy V. Meehan, Work Order Control Clerk (Typing), Work Management Section DO - For sustained superior performance in her duties as a Work Order Clerk.

Ruth A. Nash, Clerk Typist, Plant Hormone Laboratory, PPHI - For dedicated, outstanding secretarial and administrative support to the Plant Hormone Laboratory.

Norma J. Peters, Clerk Typist, Animal Parasitology Institute - For highly significant service to the public, the Director's Office, and the personnel of the Animal Parasitology Institute.

James A. Rogers, Gardener, USNA - For superior performance in applying best gardening practices in helping to create the 1987 version of the National Country Garden during a special assignment.

Charlotte J. Schomburg, Agronomist, Environmental Chemistry Laboratory, AEQI - For exceptional initiative, dedication, and accomplishment while collecting field samples, in support of research on the chemistry of pesticides in fog.

James B. Warfel, Laborer, USNA - For superior performance in applying best gardening practices in helping to create the 1987 version of the National Country Garden during a special assignment.

George M. Wiggans, Research Geneticist, Animal Improvement Programs Laboratory, ASI - For developing computerized management systems for feed inventory/billing and dairy animal assignment/location in Animal Operations.

LENGTH OF SERVICE AWARDS

Length of Service Awards

Congratulations to the following who recently received 30- and 40-year length of service awards:

30 Years

Paul Grubb - Division of Operations
Herbert L. Johnson - Livestock & Poultry Sciences Institute
Lorna C. Marselas - Beltsville Area Office
Frank E. McDonough - Beltsville Human Nutrition Research Center
Lyndon E. Owens - Livestock & Poultry Sciences Institute
George C. Papavizas - Plant Sciences Institute
Mary E. Thompson - Beltsville Human Nutrition Research Center
Dale R. Waldo - Livestock & Poultry Sciences Institute

40 Years

A. M. Golden - Plant Sciences Institute
Karl H. Norris - Product Quality & Development Institute

CHILD CARE CENTER

Anniversary Celebration

On Wednesday, May 25, 1988, the Child Care Center will celebrate its 20th Anniversay. There will be a formal presentation in the Auditorium, Bldg. 003, at 10 a.m. Following this ceremony the attendees will be bused to the Child Care Center for dedication of the new playground equipment. Refreshments will be served following the dedication. Employees are welcome.

EPILOGUE

The Perfect Strawberry

I would like to be able to give consumers a series of berries throughout the year so that when they bit into that fruit they would be glad they were alive that day.

---------Gene J. Galleta, Fruit Laboratory, HSI

Waldemar Klassen